

Full name: _____ GT ID: _____ Sec: _____

Quiz 10 Version A

You have 15 minutes to take the quiz. No phones, notes, or use aids of any kind is permitted.

1. (4 points) [
- Conservative Vector Fields**
-]
- True or False.*

(a) The vector field $\mathbf{F} = \langle y + z, z, x + y \rangle$ is conservative.

[A]

☐ **TRUE**☐ **FALSE**(b) Find a potential function for $\mathbf{F} = \langle y \sin z, x \sin z, xy \cos z \rangle$.

[AN]

2. (6 points) [
- FToLI**
-]

Evaluate the line integral $\int_C \mathbf{F} \cdot \mathbf{T} \, ds$ using FToLI.

[AJN]

$$\mathbf{F} = \left\langle 3x^2, \frac{z^2}{y}, 2z \ln y \right\rangle,$$

$$C : \mathbf{r}(t) = (1 - t)\langle 1, 1, 1 \rangle + t\langle 1, 2, 3 \rangle, \quad t \in [0, 1].$$